

H.A

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/889,558	LEROUX, CHARLES	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jennifer M. Dolan	2813	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's arguments of 6/28/05.
2. ☒ The allowed claim(s) is/are 11-17.
3. ☒ The drawings filed on 27 July 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |   |
|--|---|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date <u>10/25/01</u> | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material                               | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|  | 9. <input type="checkbox"/> Other _____   |

  
**CARL WHITEHEAD, JR.**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2800**

## **DETAILED ACTION**

### ***Allowable Subject Matter***

1. Claims 11-17 are allowed.
2. The following is an examiner's statement of reasons for allowance:

The primary reason for allowance is the combination of using a series of Zener diodes formed in a semiconductor layer disposed on an insulating layer, where the Zener diodes are connected in a series and directly polarized.

The Examiner notes that based on the Applicant's specification and the arguments presented on 6/28/05, "directly polarized" is taken to mean that the diodes are all forward biased, or having a p-region at a greater potential than the n-region (see page 3, first paragraph of arguments; pages 5-7 of specification). The prior art, however, teaches fundamentally different arrangements for electrostatic discharge. For example, EP 0 263 711 to Tsuzuki or DE 31 42 591 to Turley disclose silicon-on-insulator type Zener diodes used for electrostatic discharge, but the diodes are either oriented in opposite directions or the diodes are each reverse biased, rather than forward biased. For both of these prior art situations, the Zener diode chain blocks the passage of current until a voltage greater than the reverse breakdown voltage, which tends to be relatively large, is applied to the diode chain. These arrangements are distinct from the presently claimed invention, which provides low-voltage electrostatic discharge by using a string of forward based diodes, and thus scaling the blocking current using the forward turn-on voltage of the diode rather than the reverse breakdown voltage.

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The prior art, such as US 6,157,530 to Pequignot et al., does provide some suggestion that a string of forward biased diodes can be advantageously used for low-voltage electrostatic discharge protection. Pequignot, however, does not teach that such a structure is applicable to or advantageously used with either zener diodes or silicon-on-insulator type diodes. Hence, it is the examiner's opinion that a person having ordinary skill in the art would have found no motivation or reasonable expectation of success for either substituting silicon-on-insulator zener diodes for each diode in Pequignot, or for changing the reverse or alternating biased SOI zener diode series of Turley or Tsuzuki for a forward biased series

3. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer M. Dolan whose telephone number is (571) 272-1690. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer M. Dolan  
Examiner  
Art Unit 2813

jmd

  
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